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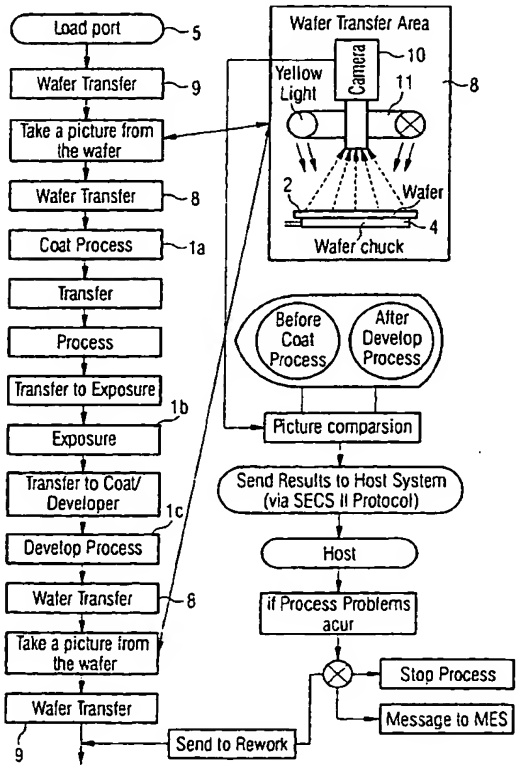
(54) Title: ARRANGEMENT AND METHOD FOR DETECTING DEFECTS ON A SUBSTRATE IN A PROCESSING TOOL



(57) Abstract: A processing tool (1) for manufacturing semiconductor devices (2), e.g. a lithography cluster, comprises a device transfer area (8) with an optical sensor (10), preferably a CCD-camera, and an illumination system (11) mounted within, such that a substrate (2) being transferred to or from one of its processing chambers (1a, 1b, 1c) can be scanned during its movement at low resolution. The substrate (2) may be either a semiconductor wafer to be manufactured or a reticle or mask used to perform an exposure on said wafer. The scanning is performed twice, prior and after processing in at least one the processing chambers (1a, 1b, 1c) of the processing tool (1). Both images are compared and optionally subtracted from each other. Defects imposed to the substrate due to contaminating particles only during the present processes with sizes larger than 10 µm are visible on the subtracted image, while defects imposed earlier are diminished as well as structures formed from e.g. a mask pattern below 10 µm. Pattern recognition allows an efficient classification of the defects being just detected in a processing tool (1). Thus, semiconductor device yield and metrology capacity are advantageously increased.

WO 02/093639 A2